

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An ultrasonic imaging apparatus for imaging a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the system comprising:
first and second tanks filled with a selected ultrasonically transmissive fluid, the first tank containing the ultrasonic transducer and the second tank containing at least a portion of the ultrasonic detector;
a third tank positioned intermediate the first and second tanks and adapted to receive the portion of the patient anatomy to be imaged, the third tank being filled with the selected ultrasonically transmissive fluid; and
first and second endwalls to define boundaries between the first and third tanks and between the second and third tanks, respectively, the first and second endwalls being made of a material that is ultrasonically transmissive.
2. (Original) The system of claim 1 wherein the first and second endwalls are manufactured from cross-linked polystyrene.
3. (Original) The system of claim 1 wherein the first and second endwalls are manufactured from TPX.
4. (Original) The system of claim 1 wherein the first and second endwalls are manufactured from material having an impedance such that the reflection of ultrasonic signals is no greater than one percent.

5. (Currently Amended) ~~The system of claim 1 wherein~~ An ultrasonic imaging apparatus for imaging a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the system comprising:

first and second tanks filled with a selected ultrasonically transmissive fluid, the first tank containing the ultrasonic transducer and the second tank containing at least a portion of the ultrasonic detector;

a third tank positioned intermediate the first and second tanks and adapted to receive the portion of the patient anatomy to be imaged, the third tank being filled with the selected ultrasonically transmissive fluid, the third tank comprises ~~having~~ first and second opposing sidewalls, the system further comprising an access panel in the first sidewall to permit access to the portion of the patient anatomy to be imaged; and

first and second endwalls to define boundaries between the first and third tanks and between the second and third tanks, respectively, the first and second endwalls being made of a material that is ultrasonically transmissive.

6. (Original) The system of claim 5, further comprising a drain aperture to drain selected ultrasonically transmissive fluid from the third tank wherein acoustical coupling between the ultrasonic transducer and the ultrasonic detector is maintained via the selected ultrasonically transmissive fluid in the first and second tanks and the portion of the patient anatomy to be imaged.

7. (Currently Amended) ~~The system of claim 1, further comprising~~ An ultrasonic imaging apparatus for imaging a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the system comprising:

first and second tanks filled with a selected ultrasonically transmissive fluid, the first tank containing the ultrasonic transducer and the second tank containing at least a portion of the ultrasonic detector;

a third tank positioned intermediate the first and second tanks and adapted to receive the portion of the patient anatomy to be imaged, the third tank being filled with the selected ultrasonically transmissive fluid;

first and second endwalls to define boundaries between the first and third tanks and between the second and third tanks, respectively, the first and second endwalls being made of a material that is ultrasonically transmissive; and

a fluid holding tank coupled to the third tank to hold a reserve volume of the selected ultrasonically transmissive fluid.

8. (Original) The system of claim 7, further comprising a temperature control system to control the temperature of the selected ultrasonically transmissive fluid in the fluid holding tank.

9. (Original) The system of claim 1 wherein the selected ultrasonically transmissive fluid is water.

10. (Currently Amended) ~~The system of claim 1 wherein~~ An ultrasonic imaging apparatus for imaging a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the system comprising:

first and second tanks filled with a selected ultrasonically transmissive fluid, the first tank containing the ultrasonic transducer and the second tank containing at least a portion of the ultrasonic detector;

a third tank positioned intermediate the first and second tanks and adapted to receive the portion of the patient anatomy to be imaged, the third tank being filled with the selected ultrasonically transmissive fluid;

first and second endwalls to define boundaries between the first and third tanks and between the second and third tanks, respectively, the first and second endwalls being made of a material that is ultrasonically transmissive; and

at least one of the first and second endwalls ~~is-being~~ moveable to retain the portion of the patient anatomy to be imaged.

11. (Original) The system of claim 10, further comprising a flexible coupling to couple the moveable endwall to its respective tank.

12. (Original) The system of claim 10 wherein movement of the moveable endwall causes a change in a volume of fluid contained in its respective tank, the system further comprising a fluid reservoir in fluid communication with the tank coupled to the moveable endwall to maintain a fluid level of the selected ultrasonically transmissive fluid in the tank.

13. (Currently Amended) ~~The system of claim 1 wherein~~ An ultrasonic imaging apparatus for imaging a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the system comprising:

first and second tanks filled with a selected ultrasonically transmissive fluid, the first tank containing the ultrasonic transducer and the second tank containing at least a portion of the ultrasonic detector;

a third tank positioned intermediate the first and second tanks and adapted to receive the portion of the patient anatomy to be imaged, the third tank being filled with the selected ultrasonically transmissive fluid;

first and second endwalls to define boundaries between the first and third tanks and between the second and third tanks, respectively, the first and second endwalls being made of a material that is ultrasonically transmissive; and

~~the first and second endwalls are-being~~ moveable to retain the portion of the patient anatomy to be imaged.

14. (Original) The system of claim 13, further comprising a first flexible coupling to couple the first moveable endwall to the first tank and a second flexible coupling to couple the second moveable endwall to the second tank.

15. (Original) The system of claim 13 wherein movement of the moveable endwalls causes a change in a volume of fluid contained in the first and second tanks, the system further comprising a fluid reservoir in fluid communication with the first and second tanks to maintain a predetermined fluid level of the selected ultrasonically transmissive fluid in the first and second tanks.

16. (Original) The system of claim 1, further comprising a visual indicator of the predetermined focal plane to indicate the predetermined focal plane with respect to an external portion of the patient anatomy.

17. (Currently Amended) ~~The system of claim 1, further comprising~~ An ultrasonic imaging apparatus for imaging a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the system comprising:

first and second tanks filled with a selected ultrasonically transmissive fluid, the first tank containing the ultrasonic transducer and the second tank containing at least a portion of the ultrasonic detector;

a third tank positioned intermediate the first and second tanks and adapted to receive the portion of the patient anatomy to be imaged, the third tank being filled with the selected ultrasonically transmissive fluid;

first and second endwalls to define boundaries between the first and third tanks and between the second and third tanks, respectively, the first and second endwalls being made of a material that is ultrasonically transmissive; and

a visual indicator of the selected focal plane to indicate the selected focal plane with respect to an external portion of the patient anatomy.

18. (Original) The system of claim 1, further comprising a position retention member to maintain the patient anatomy in a stable position during imaging of the selected anatomical feature.

19.-27. (Cancelled)

28. (Currently Amended) A method of ultrasonic imaging of a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the method comprising:

activating the ultrasonic transducer in a first tank containing the ultrasonic detector to generate ultrasonic signals, the first tank being filled with a selected ultrasonically transmissive fluid;

coupling ultrasonic signals through an ultrasonically transmissive first endwall between the first tank and a second tank, the second tank being positioned intermediate between the first tank and a third tank;

receiving the portion of the patient anatomy to be imaged in the second tank filled with the ultrasonically transmissive fluid;

coupling ultrasonic signals through an ultrasonically transmissive second endwall between the second tank and ~~a~~ the third tank; and

detecting ultrasonic signals with the ultrasonic detector in the third tank containing the ultrasonic detector, the third tank being filled with the ultrasonically transmissive fluid.

29. (Original) The method of claim 28 wherein the first and second endwalls are manufactured from cross-linked polystyrene.

30. (Original) The method of claim 28 wherein the first and second endwalls are manufactured from material having an impedance such that the reflection of ultrasonic signals is no greater than one percent.

31. (Currently Amended) ~~The method of claim 28 wherein~~ A method of ultrasonic imaging of a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the method comprising:

activating the ultrasonic transducer in a first tank containing the ultrasonic detector to generate ultrasonic signals, the first tank being filled with a selected ultrasonically transmissive fluid;

coupling ultrasonic signals through an ultrasonically transmissive first endwall between the first tank and a second tank, the second tank being positioned intermediate between the first tank and a third tank, the second tank comprises having an access panel to permit access to the portion of the patient anatomy to be imaged, the method further comprising accessing the portion of the patient anatomy to be imaged via the access panel;

receiving the portion of the patient anatomy to be imaged in the second tank filled with the ultrasonically transmissive fluid;

coupling ultrasonic signals through an ultrasonically transmissive second endwall between the second tank and the third tank; and

detecting ultrasonic signals with the ultrasonic detector in the third tank containing the ultrasonic detector, the third tank being filled with the ultrasonically transmissive fluid.

32. (Original) The method of claim 31, further comprising draining the ultrasonically transmissive fluid from the second tank wherein acoustical coupling between the ultrasonic transducer and the ultrasonic detector is maintained via the selected ultrasonically transmissive fluid in the first and third tanks and the portion of the patient anatomy to be imaged.

33. (Previously Presented) The method of claim 28 wherein the selected ultrasonically transmissive fluid is water.

34. (Currently Amended) ~~The method of claim 28 wherein~~ A method of ultrasonic imaging of a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the method comprising:

activating the ultrasonic transducer in a first tank containing the ultrasonic detector to generate ultrasonic signals, the first tank being filled with a selected ultrasonically transmissive fluid;

coupling ultrasonic signals through an ultrasonically transmissive first endwall between the first tank and a second tank, the second tank being positioned intermediate between the first tank and a third tank;

receiving the portion of the patient anatomy to be imaged in the second tank filled with the ultrasonically transmissive fluid;

coupling ultrasonic signals through an ultrasonically transmissive second endwall between the second tank and the third tank, at least one of the first and second endwalls is moveable, the method further comprising moving the at least one of the first and second endwalls to retain the portion of the patient anatomy to be imaged; and

detecting ultrasonic signals with the ultrasonic detector in the third tank containing the ultrasonic detector, the third tank being filled with the ultrasonically transmissive fluid.

35. (Original) The method of claim 34 wherein movement of the moveable endwall causes a change in a volume of fluid contained in its respective tank, the method further comprising maintaining a predetermined fluid level of the ultrasonically transmissive fluid in the tank by moving fluid to and from a fluid reservoir in fluid communication with the tank coupled to the moveable endwall.

36. (Original) The method of claim 28 wherein the first and second endwalls are moveable, the method further comprising moving the first and second endwalls to retain the portion of the patient anatomy to be imaged.

37. (Original) The method of claim 36 wherein movement of the first and second endwalls causes a change in a volume of fluid contained in the first and third tanks, the method further comprising maintaining a predetermined fluid level of the ultrasonically transmissive fluid in the first and third tanks by moving fluid to and from a fluid reservoir in fluid communication with the first and third tanks.

38. (Currently Amended) ~~The method of claim 28 wherein the ultrasound energy detected by the ultrasound detector provides imaging of a predetermined focal plane in the portion of the patient anatomy to be imaged, the method further comprising~~ A method of ultrasonic imaging of a portion of patient anatomy using an ultrasonic transducer and an ultrasonic detector, the method comprising:

activating the ultrasonic transducer in a first tank containing the ultrasonic detector to generate ultrasonic signals, the first tank being filled with a selected ultrasonically transmissive fluid;

coupling ultrasonic signals through an ultrasonically transmissive first endwall between the first tank and a second tank, the second tank being positioned intermediate between the first tank and a third tank;

receiving the portion of the patient anatomy to be imaged in the second tank filled with the ultrasonically transmissive fluid;

coupling ultrasonic signals through an ultrasonically transmissive second endwall between the second tank and the third tank;

detecting ultrasonic signals with the ultrasonic detector in the third tank containing the ultrasonic detector, the third tank being filled with the ultrasonically transmissive fluid; and

providing a visual indicator of the predetermined focal plane to indicate the predetermined focal plane with respect to an external portion of the patient anatomy.

39.-48. (Cancelled)